

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An exhaust gas control apparatus for an internal combustion engine ~~characterized by~~, comprising:

an exhaust catalyst disposed in an exhaust passage (4) of the internal combustion engine;

a concentration detection unit (10) that is capable of detecting a total concentration of a sulfur oxide and a hydrogen sulfide contained in an exhaust gas that passes through the exhaust catalyst, and detecting a concentration of the sulfur oxide; and

a sulfur concentration estimation unit (15) that estimates a sulfur concentration of a fuel based on a detection value of the concentration detection unit (10) when it is determined that the exhaust gas is at one of a stoichiometric and rich air/fuel ratio.

2. (Currently Amended) The exhaust gas control apparatus according to claim 1, ~~characterized by~~ further comprising an air/fuel ratio control unit (15) that controls the air/fuel ratio of the exhaust gas into one of the stoichiometric state and the rich state.

3. (Currently Amended) The exhaust gas control apparatus according to claim 2, ~~characterized in that~~ wherein the air/fuel ratio control unit (15) executes a rich spike control in which the air/fuel ratio of the exhaust gas is temporarily brought into the rich state at a predetermined cycle, and the air/fuel ratio control unit (15) comprises a rich amount increase unit that executes at least one of a control for holding the air/fuel ratio of the exhaust gas in the rich state for a longer time than a time under the rich spike control, and a control for

bringing the air/fuel ratio of the exhaust gas into a richer state than a state under the rich spike control.

4. (Currently Amended) The exhaust gas control apparatus according to claim 2-~~or 3~~, ~~characterized in that~~wherein the exhaust catalyst comprises a NOx catalyst (8)-of occlusion and reduction type, a NOx occluded amount estimation unit (15)-is provided for estimating an amount of NOx that has been occluded in the NOx catalyst-(8), and the air/fuel ratio control unit (15)-controls the air/fuel ratio of the exhaust gas into one of the stoichiometric state and the rich state when the NOx occluded amount estimated by the NOx occluded amount estimation unit is determined to be equal to or larger than a predetermined amount.

5. (Currently Amended) The exhaust gas control apparatus according to ~~any one of claims 1 to 4~~claim 1, ~~characterized by further~~ comprising a catalytic temperature detection unit (15)-that detects a temperature of the exhaust catalyst, characterized in that the sulfur concentration estimation unit inhibits an estimation of the concentration of sulfur contained in the fuel when it is determined that the temperature detected by the catalytic temperature detection unit (15)-is equal to or higher than a predetermined temperature.

6. (Currently Amended) An exhaust gas control method for an internal combustion engine, in which an exhaust catalyst is disposed in an exhaust passage (4)-of the internal combustion engine, and a concentration detection unit (10)-that is capable of detecting a total concentration of a sulfur oxide and a hydrogen sulfide contained in an exhaust gas that passes through the exhaust catalyst, and detecting a concentration of the sulfur oxide, the exhaust gas control method being characterized in that a sulfur concentration of a fuel is estimated based

on a detection value of the concentration detection unit ~~(10)~~ when it is determined that the exhaust gas is at one of a stoichiometric and rich air/fuel ratio.

7. (Currently Amended) The exhaust gas control method according to claim 6, ~~characterized in that~~ wherein the air/fuel ratio of the exhaust gas is controlled into one of the stoichiometric state and the rich state.

8. (Currently Amended) The exhaust gas control method according to claim 7, ~~characterized in that~~ wherein a rich spike control in which the air/fuel ratio of the exhaust gas is temporarily brought into the rich state is executed at a predetermined cycle, and at least one of a control for holding the air/fuel ratio of the exhaust gas in the rich state for a longer time than a time under the rich spike control, and a control for bringing the air/fuel ratio of the exhaust gas into a richer state than a state under the rich spike control is executed.

9. (Currently Amended) The exhaust gas control method according to claim 7 ~~or 8~~, ~~characterized in that~~ wherein an amount of NO_x that has been occluded in a NO_x catalyst ~~(8)~~ provided as the exhaust catalyst is estimated, and the air/fuel ratio of the exhaust gas is controlled into one of the stoichiometric state and the rich state when the estimated occluded amount of the NO_x is determined to be equal to or larger than a predetermined amount.

10. (Currently Amended) The exhaust gas control method according to ~~any one of claims 6 to 9~~ claim 6, ~~characterized in that~~ wherein a temperature of the exhaust catalyst is detected, and an estimation of the sulfur concentration of the fuel is inhibited when it is determined that the detected temperature is equal to or higher than a predetermined temperature.